

What do you think
inquiry means?

What might this involve?

How might this vary
from other forms
of learning?



Inquiry into Inquiry

Part Two

Ensuring Quality Learning

**The most important
technology of
the 21st century is . . .**



the teacher!

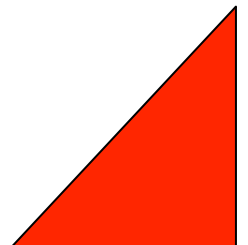
Quality planning

Quality knowledge

Quality questions

Quality resources

Quality reflection



Tools to support Inquiry

- Questioning
- Thinking
- Web 2.0

Topic as a Question

- From context to concept e.g. poverty
- Have a go - write a question for a current unit of study e.g. What determines wealth and poverty? *or* How does poverty impact lives?
- What might be a good question for our inquiry into inquiry today?

A Fertile Question is...

open

Leads to an expansive answer

undermining

Digs into my beliefs / challenges me

connected

Is relevant and authentic

rich

Will lead to a wealth of new ideas

charged

Will be absorbing and consuming

practical

Is manageable and can be resourced

Ref: Yoram Harpaz & Adam Lefstein - Fertile Questions

<http://www.learningtolearn.sa.edu.au/Colleagues/pages/default/harpaz/?reFlag=1>

**What questions
will lead me
to a richer understanding
of inquiry?**

Make a list of the questions that will lead **you** to a richer understanding of inquiry.

**What is different about the 21st century
and therefore the learning required?**

**How can I plan ahead and ensure quality learning
if students are to have input into direction?**

**How can I ensure a balanced curriculum
and adherence to the nature of the learning areas?**

**How can I be sure
that the learning will be rich
if students begin to
have more control of their learning?**

To answer the over arching question we need to develop subsidiary questions that lead to the building of a concept
e.g.

- * Do I understand what effective pedagogy looks like in the classroom?
- * Where do I stand currently?
- * Where can I find out more information?
- * What am I teaching and why?
- * How do I teach?
- * How are my students achieving? Am I meeting their needs?
- * What are the needs for 21st century?
- * What are the opportunities and challenges of the 21st century?
- * What is powerful learning and what is it powerful to learn?
- * Is there common understanding amongst my learning community?

SOLO TAXONOMY (after Biggs and Collis 1982)

[Structure of
Observed
Learning
Outcomes](#)

Define
Identify
Do simple
procedure

Define
Describe
List
Do algorithm
Combine

Compare/contrast
Explain causes
Sequence
Classify
Analyse
Part/whole
Relate
Analogy
Apply
Formulate questions

Evaluate
Theorise
Generalise
Predict
Create
Imagine
Hypothesise
Reflect



Prestructural Unistructural Multistructural Relational Extended abstract

Where can I go to find answers?

Keyword Search

“21st century learning”

[http://www.21stcenturyschools.com/
What_is_21st_Century_Education.htm](http://www.21stcenturyschools.com/What_is_21st_Century_Education.htm)

<http://21stcenturylearning.typepad.com/blog/>



<http://fno.org/Jan2010/bookmark.html>

Online Support for Learning

- Any Questions <http://www.anyquestions.co.nz/>

-



Let us help you find the answers

Real time, real people, real help with your homework

- Ask an Expert <http://www.libraryspot.com/askanexpert.htm>

- Yellow Pages

- National Library

- Find the email contact on related websites and email these people

- Contact other schools in areas that relate to your study and engage in dialogue.

Ask an Expert

[Ask A+ Locator](#)

Quality database of "Ask a" services.

[AskOxford.com](#)

The word experts at Oxford await your queries.

[AskJeeves](#)

Jeeves points you to relevant resources.

[AskMe.com](#)

Volunteer experts give free answers & advice.

[Ask Dr.Math](#)

Your K-12 math expert online.

[Ask Mayo](#)

Mayo Clinic doctor answers questions.

[All Experts](#)

More than 3,500 experts on hand.

[Experts Exchange](#)

Pose questions to 5,000 computer experts.

[WebHelp](#)

Help from humans in real time.

[Grammar Lady](#)

Find answers to grammar questions.

[Scientific American](#)

Science questions and answers.

[Ask a Librarian](#)

Choose a topic and fill out a form with your question.

[Experts.com](#)

Database of experts in various subjects.

[IPL Reference](#)

Ask IPL reference librarians.

[AskERIC](#)

Site responds to education questions.

[Mad Scientist Network](#)

Submit science questions or search archives.

[ALA Librarian](#)

Live instant messaging with a librarian.



www.lumosity.com

Reclaim your brain

Scientifically designed brain fitness games to improve memory, attention, and processing speed.

Ads by Google

More than 1 million questions answered! AllExperts.com is the oldest & largest free Q&A service on the Internet.

Animals/Pets

Dogs, cats, fish, birds

Arts/Humanities

Books, writing, fine arts

Autos

Cars, Motorcycles, Racing

Business

B2B resources, start-ups

Cities/Towns

U.S., Canada

Comedy

Jokes, cartoons, multimedia

Computing/Technology

Hardware, software

Cultures

Traditions, languages, int'l news

Education

Adult ed, teachers, college

Food/Drink

Recipes, wine, world cuisine

Gadgets

Cell phones, PDAs, cameras

Health/Fitness

Diseases, medicine

Hobbies

Crafts, collecting, pastimes

Home/Garden

Decorating, design, repair

Homework Help

History, languages, science

Industry

News, research, commerce

Internet/Online

Help, tips, tutorials

Jobs/Careers

Resumes, interviews, tips

Kids

Fun sites, safe chat

Money

Stocks, credit, banking

Movies

Reviews, stars, box office

Music/Performing Arts

MP#s, rock, top 40

Parenting/Family

Pregnancy, family fun

People/Relationships

Dating, seniors, gay/lesbian

Real Estate

Buy, sell, rent

Recreation/Outdoors

Gear, advice, training tips

Religion/Spirituality

Beliefs, scriptures

Science

Biology, space, geography

Shopping

Online/offline, bargains

Sports

Pro, college, spectator

Style

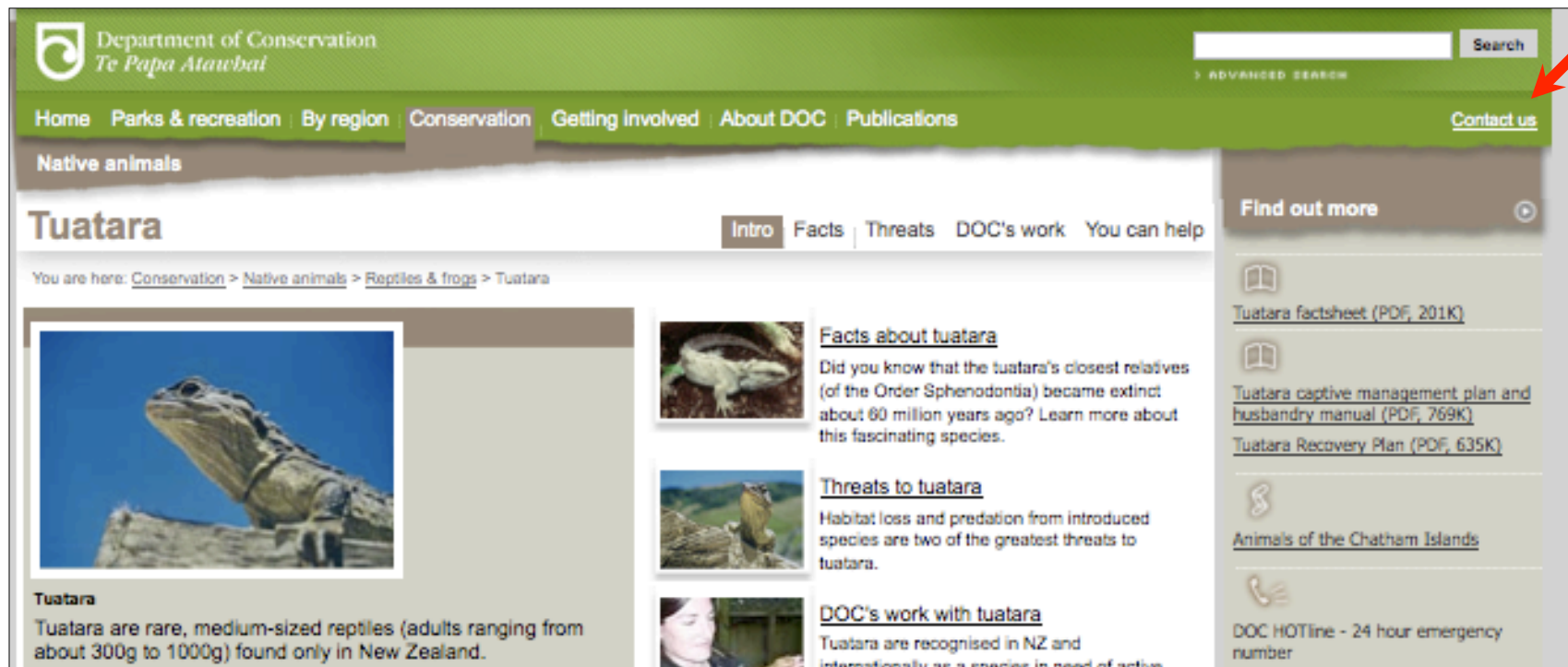
Fashion, entertaining

Teens

Cool sites, school help

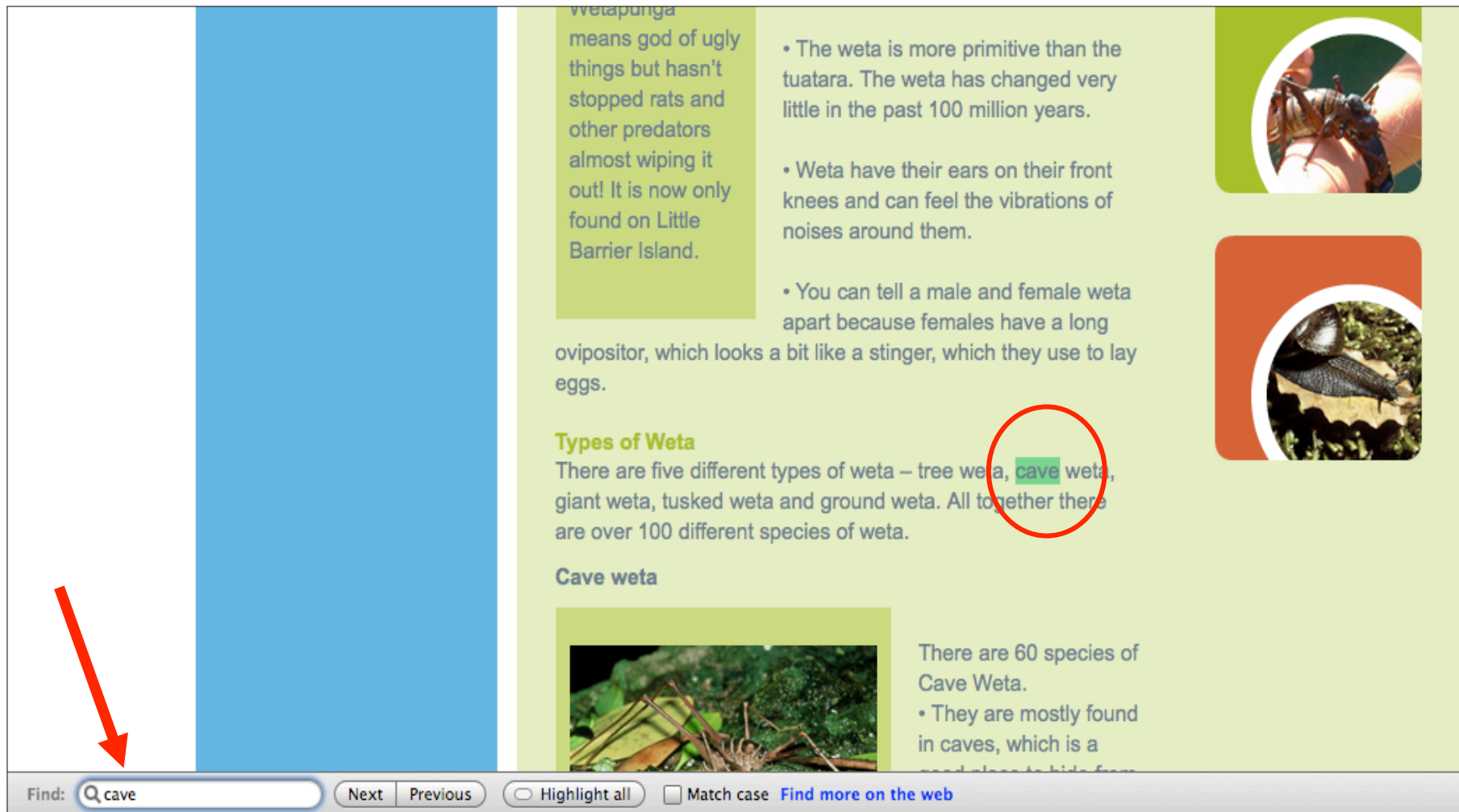
Travel

Destinations, vacations



- Find the email contact on related websites and email these people.

Information literacy



The screenshot shows a web browser window with a search bar at the bottom left containing the text "Find: Q cave". A red arrow points to the search bar. The main content area displays information about weta. A red circle highlights the word "cave" in the text "There are five different types of weta – tree weta, cave weta, giant weta, tussock weta and ground weta. All together there are over 100 different species of weta." The page also includes a sidebar with a blue background, a list of bullet points about weta, and two circular images of weta. The bottom of the browser window shows a toolbar with buttons for "Next", "Previous", "Highlight all", "Match case", and a link "Find more on the web".

Wetapunga means god of ugly things but hasn't stopped rats and other predators almost wiping it out! It is now only found on Little Barrier Island.

- The weta is more primitive than the tuatara. The weta has changed very little in the past 100 million years.
- Weta have their ears on their front knees and can feel the vibrations of noises around them.
- You can tell a male and female weta apart because females have a long ovipositor, which looks a bit like a stinger, which they use to lay eggs.

Types of Weta

There are five different types of weta – tree weta, cave weta, giant weta, tussock weta and ground weta. All together there are over 100 different species of weta.

Cave weta

There are 60 species of Cave Weta.

- They are mostly found in caves, which is a good place to hide from

Ctrl Z or Edit -> Find to bring up the toolbar.

Taking inquiry into your literacy programme

**Developing Vocabulary
Through e-Learning**

Imagine yourself to be a Year 5 or
6 boy.

Write a sentence about an eagle
catching its food.



© Hope Rutledge



baldeagleinfo.com

© Hope Rutledge

Home	Site Map	Eagle Feathers	Eagle's Eyesight	Feeding Habits	Nesting & Young	Eagle Migration
Bald Eagle History	Bald Eagle's Future	Our National Emblem	Bald Eagle Viewing	The Eagle Lady	Myths and Legends	Eagle Poems
Old Eagle Tree	Old Age	Golden Eagle	Young Eagle	Feasance of Eagles	Eagles of the World	Free Screen Savers
Free G						10 Wildlife Slides

Bald Ea

Color -
neck, an
Juven
develop
turn whit
The b
with a white head and tail in North American.

Plumage wingspan vulnerable carrion decaying
scavenger powerful aggressive prey shrill high
pitched twittering vocalization predators talons

Size - A female bald eagle's body length varies from 35 to 37 inches; with a wingspan of 79 to 90 inches. The smaller male bald eagle has a body length of 30 to 34 inches; with a wingspan ranging from 72 to 85 inches. An eagle's average weight is ten to fourteen pounds. Northern birds are significantly larger than their southern relatives.

Eagles sit at the top of the food chain, making them more vulnerable to toxic chemicals in the environment, since each link in the food chain tends to concentrate chemicals from the lower link.

A bald eagle's **lifting power** is about 4 pounds. They do not generally feed on chickens or other domestic livestock, but they will make use of **available food sources**. Bald eagles will take advantage of carrion (dead and decaying flesh). Because of its scavenger image, some people dislike the bald eagle. Other people do not care for powerful and aggressive birds. Still other people object merely on the grounds that it is a bird of prey, which kills other animals for food.

Voice - Shrill, high pitched, and twittering are common descriptions used for bald eagle vocalizations. Eagles do not have vocal cords. Sound is produced in the syrinx, a bony chamber located where the trachea divides to go to the lungs. Bald eagle calls may be a way of reinforcing the bond between the male and female, and to warn other eagles and predators that an area is defended.

Bald eagle audio.

Eyesight - An eagle's eye is almost as large as a human's, but its sharpness is at least four times that of a person with perfect vision.

Skeleton - It weighs about half a pound (250 to 300 grams), and is only 5 or 6 percent of its total weight. The **feathers** weigh twice that much. Eagle bones are light, because they are hollow. The beak, talons, and feathers are made of keratin.
bird skeleton

Habitat - Bald eagles live along the coast and on major lakes and rivers where they feed mainly on fish.



Female

Male

Copyright © Hope Rutledge

Welcome to NaturalReader software.

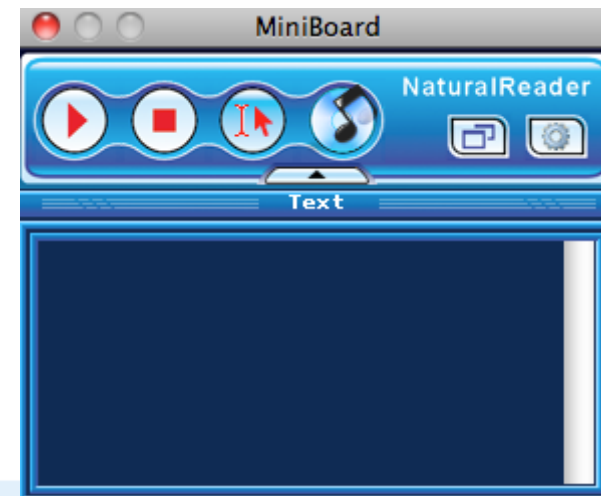
NaturalReader is a professional text to speech program that converts any written text into spoken words. In other words, it allows you listen to text instead of reading the screen!

It's never been so easy to use a text-to-speech program. Just one click, and your computer speaks any text aloud in a clear, natural sounding voice. All you do is, press Command +Option+F5, and your computer reads any text in the clipboard.

With the Miniboard, you can move NaturalReader anywhere without blocking the screen. By moving the Speed bar, you can adjust the reading speed to your preference. As well, you can change speakers by clicking the Speaker menu.

The software also allows you to convert text into an audio file, so you can listen later or burn it into a CD.

Enjoy exploring NaturalReader!



Speed 0



Speaker

Deranged



 Miniboard

All eagles are renowned for their excellent eyesight, and the bald eagle is no exception. Bald eagles are capable of seeing fish in the water from several hundred feet above, while soaring, gliding or in flapping flight.

NaturalReader 10.0

[Introduction](#)[Text To Speech](#)[Text To Mp3](#)[Scanned books](#)

It can also improve and help
proofread your writing by having
the computer read what you wrote



[See NaturalReader on BBC News](#)



Free NaturalReader 10.0

Microsoft Voice included
All functions to read aloud any text in your computer
Change speed and speaker
Miniboard to read any text in other applications

[more>>>](#)

Try it !

Please type text or paste (ctrl+v) in the box below:
(Max 200 characters)

Write or paste text in the box, and I will read to you.

<http://www.naturalreaders.com/index.htm>

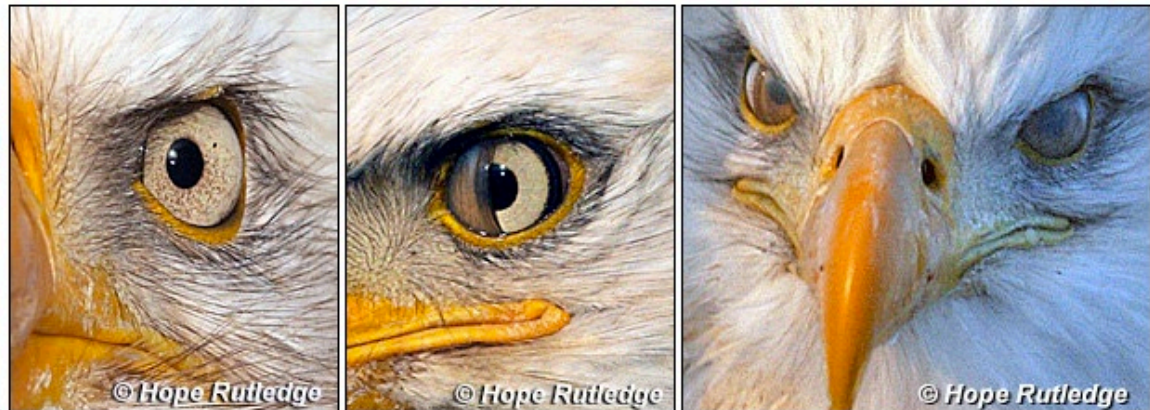
Eyesight

All eagles are renowned for their excellent eyesight, and the bald eagle is no exception. They have two foveae or centers of focus, that allow the birds to see both forward and to the side at the same time. Bald eagles are capable of seeing fish in the water from several hundred feet above, while soaring, gliding or in flapping flight. This is quite an extraordinary feat, since most fish are counter-shaded, meaning they are darker on top and thus harder to see from above. Fishermen can confirm how difficult it is to see a fish just beneath the surface of the water from only a short distance away.

Young bald eagles have been known to make mistakes, such as attacking objects like plastic bottles floating on or just below the surface of the water. Bald eagles will locate and catch dead fish much more rapidly and efficiently than live fish, because dead fish float with their light underside up, making them easier to see.

Eagles have eyelids that close during sleep. For blinking, they also have an **inner eyelid called a nictitating membrane**. Every three or four seconds, the nictitating membrane slides across the eye from front to back, wiping dirt and dust from the cornea. Because the membrane is translucent, the eagle can see even while it is over the eye.

Eagles, like all birds, have color vision. An eagle's eye is almost as large as a human's, but its sharpness is at least four times that of a person with perfect vision. The eagle can probably identify a rabbit moving almost a mile away. That means that an eagle flying at an altitude of 1000 feet over open country could spot prey over an area of almost 3 square miles from a fixed position.



The bald eagle (*Haliaeetus leucocephalus*) is a member of the sea and fish eagle group. Its closest relatives, similar in appearance and habit, are found in Africa and Asia. Even though they are fish eaters, they will take ducks and birds or whatever prey is available and easiest to obtain. Bald eagles which live along the coast and on major lakes and rivers feed mainly on fish. Bald eagles fish in both fresh and salt water.

Eagles sit at the top of the **food chain**, making them more vulnerable to toxic chemicals in the environment, since each link in the food chain tends to concentrate chemicals from the lower link. Because of their size, they have few enemies and require a large hunting area.

A bald eagle's **lifting power** is about 4 pounds. They do not generally feed on chickens or other domestic livestock, but they will make use of available food sources. Bald eagles will take advantage of carrion (dead and decaying flesh). Because of its scavenger image, some people dislike the bald eagle. Other people do not care for powerful and aggressive birds. Still other people object merely on the grounds that it is a bird of prey, which kills other animals for food.

Once an eagle spots a fish swimming or floating near the surface of the water, it approaches its prey in a shallow glide and snatches the fish out of the water with a quick swipe of its talons. Eagles can open and close their talons at will. If an eagle is dragged into the water by a fish too large for the eagle to lift, it is because the eagle refuses to release it. In some cases this is due to hunger. An eagle might drown during the encounter with the fish or if it's unable to swim far enough to reach shore. The eagle can not fly again until it's out of the water, so it uses its large wings to swim. The eagle is a strong swimmer, but if the water is very cold, it may be overcome by hypothermia.

The hunting area or home range patrolled by a bald eagle varies from 1,700 to 10,000 acres. Home ranges are smaller where food is present in great quantity.

Plumage wingspan vulnerable carrion decaying
scavenger powerful aggressive prey shrill high
pitched twittering vocalization predators talons

Eyesight

Two foveae (centres of focus) soaring gliding
flapping feat attacking

Feeding habits

Fish eaters hunting snatches swipe encounter
patrolled

Lifelong Learners

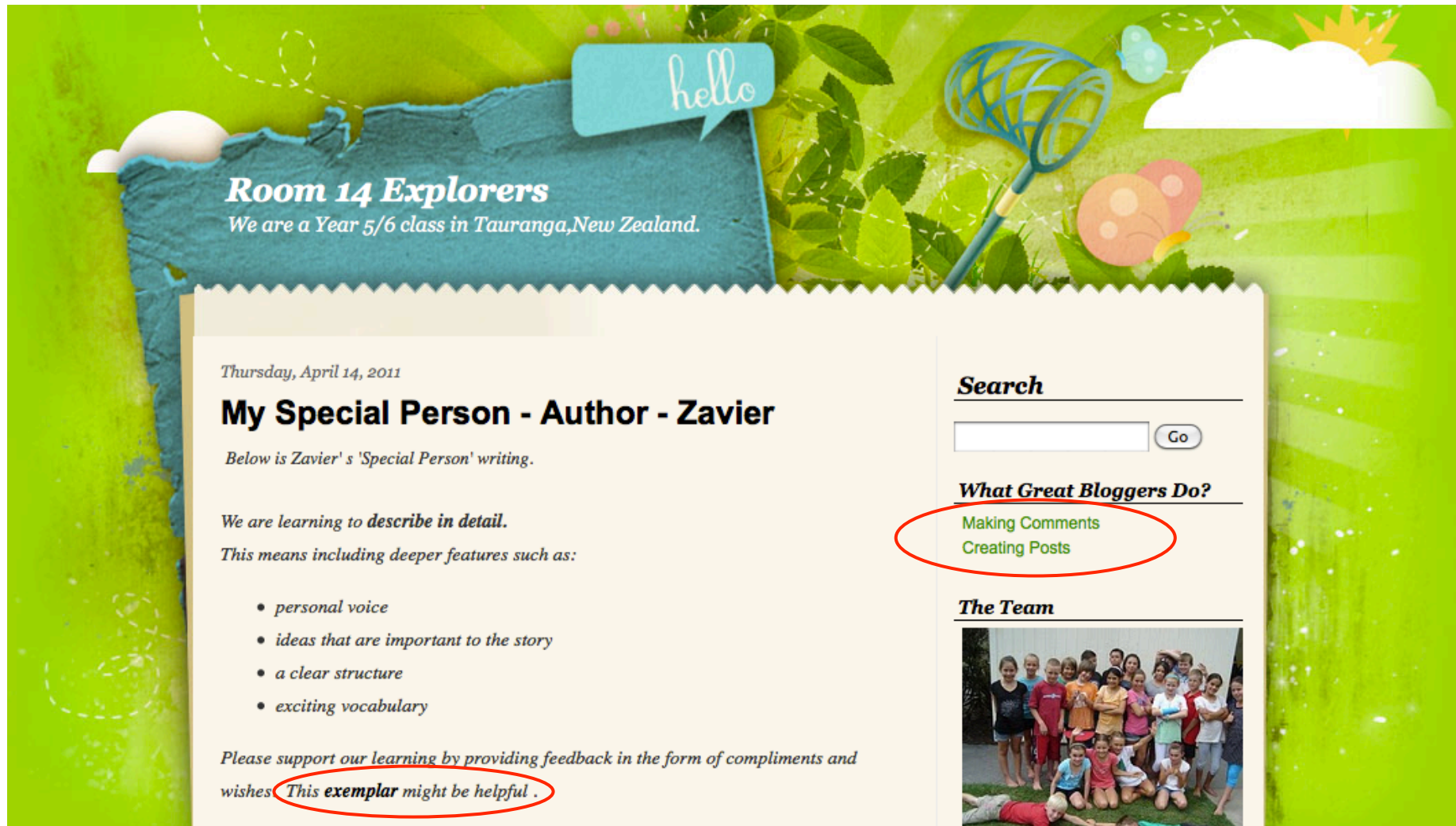
Lifelong learners – enabling them to be

Kids understanding how they learn

What, why, how of learning

Knowing what success will look like and how to get there.

Students should be able to articulate that!



hello

Room 14 Explorers

We are a Year 5/6 class in Tauranga, New Zealand.

Thursday, April 14, 2011

My Special Person - Author - Xavier

Below is Xavier's 'Special Person' writing.

We are learning to *describe in detail*.
This means including deeper features such as:

- personal voice
- ideas that are important to the story
- a clear structure
- exciting vocabulary


Please support our learning by providing feedback in the form of compliments and wishes. This exemplar might be helpful.

Search

What Great Bloggers Do?

- Making Comments
- Creating Posts

The Team



<http://taurikoroom14.blogspot.com/>

We then discussed what would be the **purpose** of Room 14's class blog.



We also talked about one of our school values -R E S P E C T and how this would apply to blogging.

To practice this we all left a comment on another classes blog.

This is what we decided would made a **quality comment**:

- being specific by explaining what you liked and why
- offering ideas for what could make the post even better
- asking a question
- making sure correct spelling and punctuation was used
- not leaving any personal details

Friday, February 11, 2011

What makes a great post?

Today we made a list of the types of posts that we would like to see on our class blog. Treva has made a start by surveying the class on their favourite music. Lucy and Keilani have started drafting a post about our class inquiry.

Here are some of the things that we decided were vital for safe and successful posting:

- Only use your first name
- Only use sensible and appropriate language
- Draft your post and have it checked by a teacher before publishing
- Never write or give out personal details- this includes phone number and address
- Ask permission before you post a photo of some-one else

Posted by Rocky at 8:33 PM

<http://taurikoroom14.blogspot.com/>

**What skills
or competencies
will I need
along the way?**

- Jot down your thoughts

Using Language,
symbols and
texts

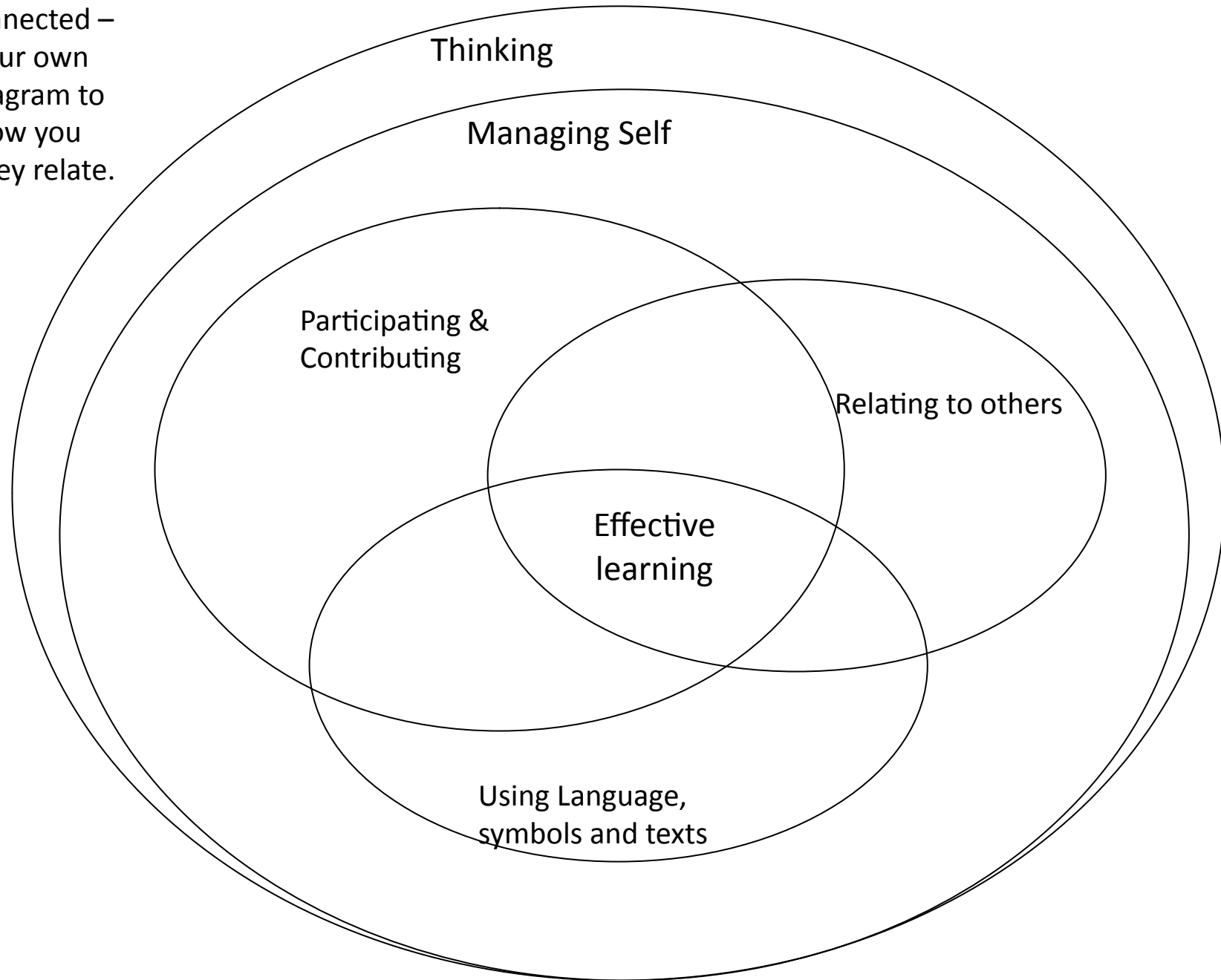
Managing Self

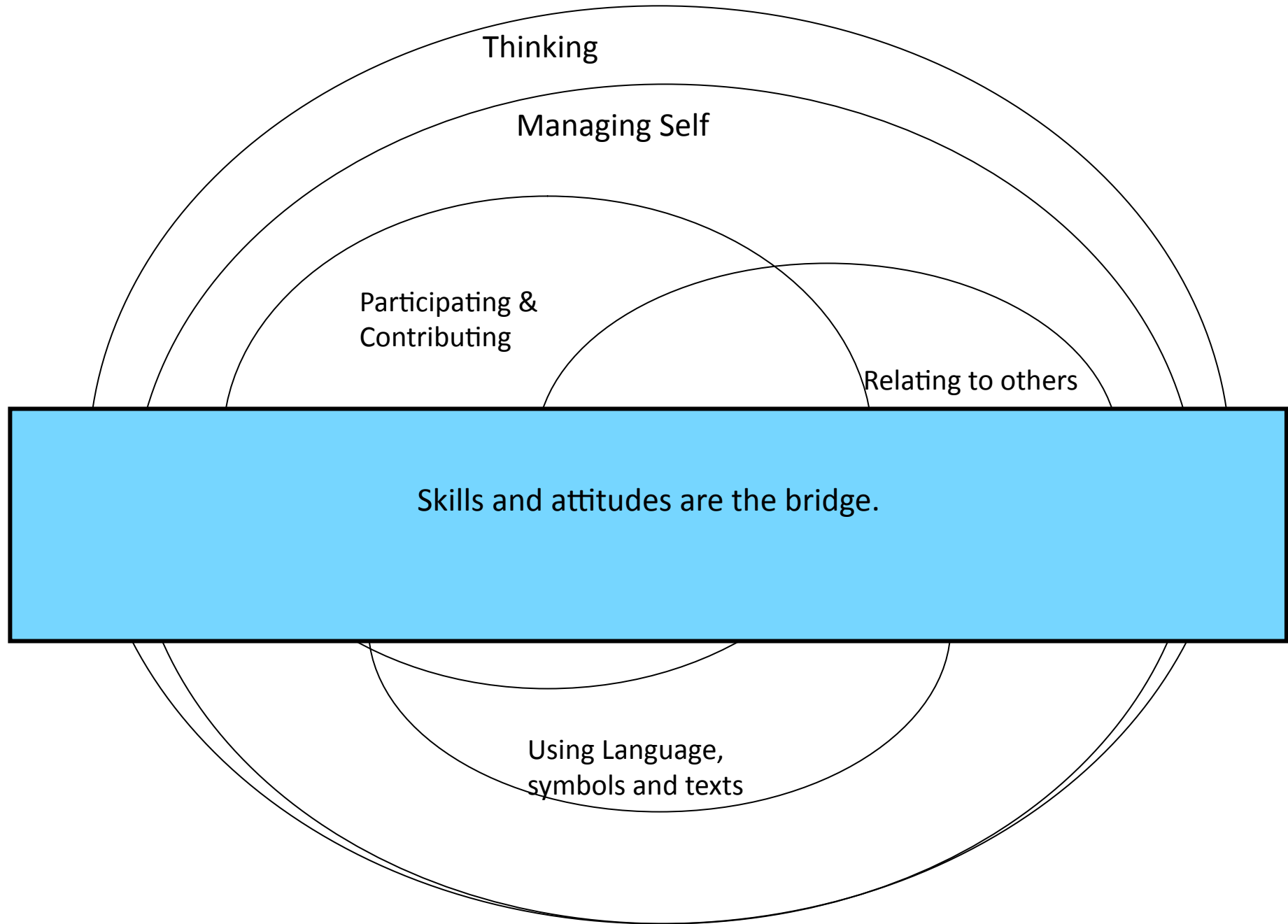
Thinking

Participating and
Contributing

Relating to
Others

KCs are
interconnected –
draw your own
venn diagram to
show how you
think they relate.





Inquiry & Honouring the Learning Areas

How can I ensure a balanced curriculum and adherence to the nature of the learning areas?

Think of a unit from last year and describe briefly to a partner.

What were the key concepts that you wanted your students to develop?

What were the learning processes you used to get there?

Did you succeed?

Know what the key learnings are to be.

Electricity

- is a flow of electrons around a closed circuit
 - * a break in the circuit ends the current flow
 - * switches open and close the circuit
 - * electricity requires an energy source - often from water movement, wind movement, steam movement, nuclear fusion or friction

Biotechnology

- What is it and how can we use it at school?
 - * People manipulate a natural process for increased benefit
 - * Man impacts the planet by his choices
 - * Everyone can make a difference - positive or negative
 - * We all have responsibility to make positive choices

Music

- is an organised pattern of sound
 - * Music tells a story, creates a mood etc.

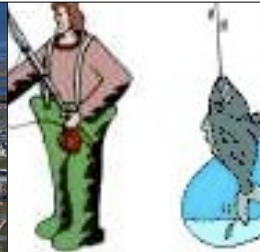
1. Write down the keywords that **you** feel describe what **science** is about. Dialogue with the others in your group to get greater clarity around this, and then write a statement that the group feels reflects the learning area.
2. Open your NZ Curriculum document and compare your statement with that of NZC p.28.
3. Share with the full group how this compares with the current learning opportunities to work in those ways.
4. How do you now believe your students should learn in science? What processes are intrinsic?

1. Dialogue with the others in your group to get clarity around keywords for **social sciences**, and then write a statement that the group feels reflects the learning area.
2. Open your NZ Curriculum document and compare your statement with that of NZC p.30.
3. Share with the full group the alignment with what happens currently. Do students have the opportunities to participate as responsible citizens?
4. Unpack citizenship - what does this mean? What qualities would be developed?
5. Dialogue with the others in your group to get clarity around **technology**

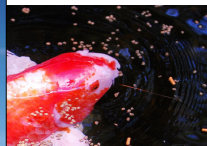
- Balance science / social sciences / technology? (Pie chart activity)
- Think about what opportunities there are in your local area that could provide field trips, school visits and visitors.
- Think about what opportunities there are to collaborate with others within NZ to undertake a study. Check out LEARNZ, Taking it Global and other collaborative projects. What could you generate within the cluster?
- Extend this to international possibilities. What countries? Why? Where will today's students interact, work, live?

Dire warning by smelter owner

Emissions scheme could force closure



What possible synergies
exist between science, social studies and technology opportunities
within and beyond the local area?



NZWEA perspective

"Wind energy makes both an immediate and long term contribution to New Zealand's electricity supply and economy. As an additional source of energy it enhances security of supply by increasing diversity in electricity generation – making us less vulnerable to rising fuel costs and electricity shortages during dry years."



**How can you combine
and yet maintain
the purity of learning areas?**

**What is
Electricity?**

**Impact of electricity
generation on environment
and people's lives**

**Properties of Metals -
aluminium**

**The Bluff Smelter
For or against?**



In [English](#), students study, use, and enjoy language and literature communicated orally, visually, or in writing.



In [the arts](#), students explore, refine, and communicate ideas as they connect thinking, imagination, senses, and feelings to create works and respond to the works of others.



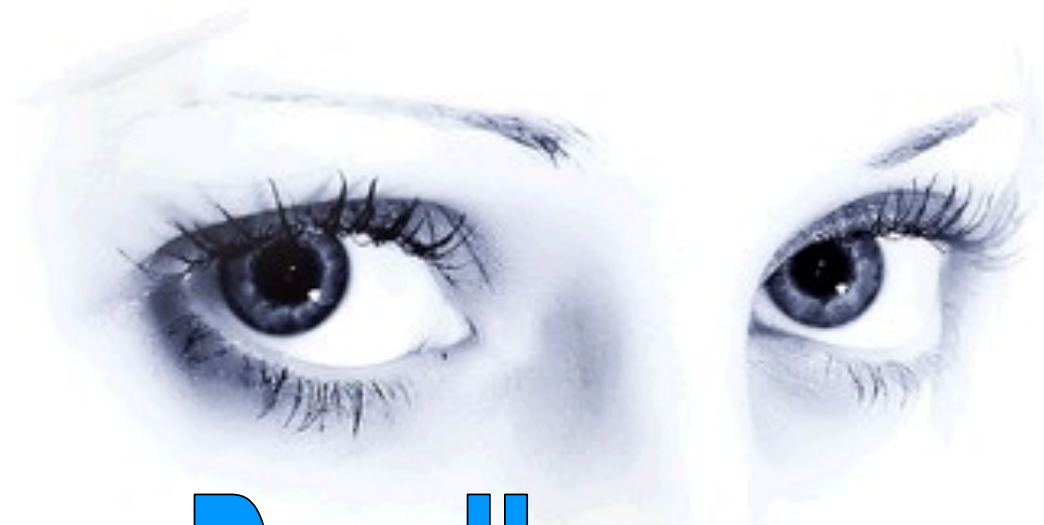
In [health and physical education](#), students learn about their own well-being, and that of others and society, in health-related and movement contexts.



In [learning languages](#), students learn to communicate in an additional language, develop their capacity to learn further languages, and explore different world views in relation to their own.



In [mathematics and statistics](#), students explore relationships in quantities, space, and data and learn to express these relationships in ways that help them to make sense of the world around them.



**Do all eyes
see the same thing?**



List aspects that could be studied in each learning area.

So what is left when you take away the model?

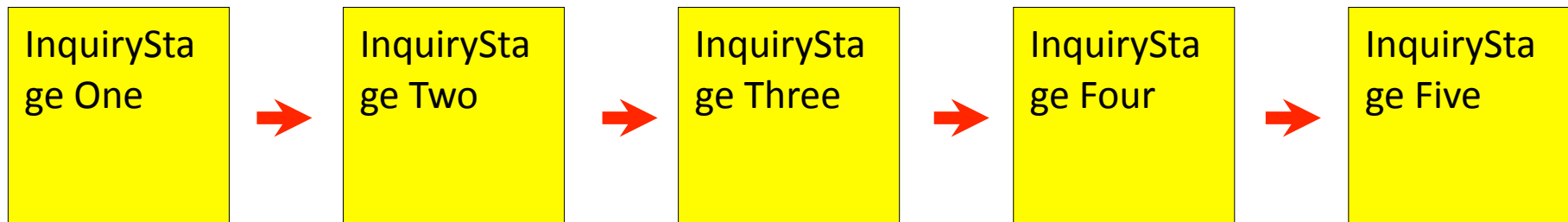
(In no particular order)

- An inquiring disposition in students - strong on curiosity, authentic contexts and development of life long learning ability.
- Rich questions and effective and diverse ways of finding the answers and coming to deeper understanding.
- A partnership in learning with the students gradually taking more responsibility for their learning as they become more able.
- A flow and process that matches the learning for any particular unit of study - unconstrained by external factors such as length of time.
- Depth, rigor and “hard fun” that caters to and extends the learning styles of the students.
- Units of work that uncover the curriculum, are integrated around concepts, and which address the “nature” of each of the learning areas involved.
- Effective teaching that ensures that students have the skills needed for the activities they need to undergo in their exploration of the inquiry focus e.g. interviewing skills, information finding and processing skills, ability to formulate questions that will lead them deeper, skills to hypothesise and test and debate and then live out their ideas, social and cooperative skills to work with others, resilience to keep digging deeper, . . .

So how are we going
with answering
our wonderings for today?

**What would students gain
by learning in this way?**

Are you ready to
chunk the model



out of Inquiry?



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Ph 021 344 253

Special thanks to

Galileo Resources <http://galileo.org>

SOLO Taxonomy - Hooked on Thinking <http://hooked-on-thinking.com/>

Fertile Questions - Harpaz & Lefstein

<http://www.learningtolearn.sa.edu.au/Colleagues/pages/default/harpaz/?reFlag=1>